

REMARKS

Upon entry of this amendment, independent claim 12 with dependent claims 13-20 will be present in the application.

The disclosure was objected to "because of the following informalities: reference to a claim on page 2, last paragraph is improper." The Applicants respectfully submit that the last paragraph beginning on page 2 of the International Application was deleted in the Preliminary Amendment filed January 12, 2006.

Replacement sheets of drawings are hereby submitted that correct the deficiencies noted in the Office Action. In addition, Figure 1 has been designated as "Prior Art".

Claims 21 and 22 were rejected under 35 U.S.C. § 112, first paragraph, the Office Action alleging that the subject specification lacks an adequate written description "as to how the "crescent shape" may be incorporated with the rings 9 and/or discs 10." Similarly, the drawings were objected to as not showing the "crescent shape" recited in claims 21 and 22. Claims 21 and 22 have been canceled. Accordingly, the rejection of claims 21 and 22 under 35 U.S.C. § 112, first paragraph, and the objection to the drawings are moot.

Claim 13 was objected to due to a typographical error. The objection is moot since claim 13 has been amended to correct the error.

Claims 12-16, 18-20 and 23 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. 3,656,548 (Donaldson) in view of "Applicants' Admitted Prior Art" (Figure 1 of the subject application). However, the rejection is replete with obvious errors. First, the Office Action contends that "Donaldson discloses all of the claimed limitations except an inner jacket with ring and disc baffles." However, claim 12 recites that the tube bundle heat exchanger comprises "at least one pair of inner and outer jacket walls defining a channel adapted for carrying a heating or cooling medium, the channel having an axis and a substantially annular cross section". The *New Webster's Dictionary and Thesaurus of the English Language*, Lexicon Publications, Danbury, CT 1992, defines "annular" as "ring-shaped". The heat exchanger 10 of the Donaldson reference cannot disclose a channel having an annular cross section because it does not disclose any structure that can act as the inner wall of an annular channel. Further, the serpentine flow path shown in Figure 1 of Donaldson can hardly be described as an annular channel.

Claim 12 also recites that the tube bundle heat exchanger comprises “at least one ring extending from an inner side **mounted to the inner jacket wall** to a medium flow-through side disposed at a distance from the outer jacket wall ...; and at least one disc extending from an outer side mounted to the outer jacket wall to **a medium flow-through side disposed at a distance from the inner jacket wall**”. Since the Donaldson device does not include an inner jacket wall, it cannot include “at least one ring extending from an inner side mounted to the inner jacket wall”. Nor can it include at least one disc having “a medium flow-through side disposed at a distance from the inner jacket wall”.

With regard to the combination of the Donaldson reference and the tube bundle heat exchanger shown in Figure 1 of the subject application, such combination does not disclose all of the features of the elements recited in claim 12. Claim 12 recites that the tube bundle heat exchanger comprises

at least one ring extending from an inner side mounted to the inner jacket wall to a medium flow-through side disposed at a distance from the outer jacket wall, the ring having a plurality of bores for receiving and positioning the tubes, the medium flow-through side of the ring being spaced at a distance from the mid-points of an outermost set of the tubes, defining a perimeter contour and **a web surrounding all of the outermost set of the tubes**; and

at least one disc extending from an outer side mounted to the outer jacket wall to a medium flow-through side disposed at a distance from the inner jacket wall, the disc having a plurality of bores for receiving and positioning the tubes, the medium flow-through side of the disc being spaced at a distance from the mid-points of an innermost set of the tubes, defining a perimeter contour and **a web surrounding all of the innermost set of the tubes**

Appendix B provides an enlarged copy of Figure 1 of the subject application that clearly shows that the rings 9 disclosed therein do not define a web surrounding all of the outermost set of the tubes and the discs 10 disclosed therein do not define a web surrounding all of the innermost set of the tubes. Nor does the Donaldson reference disclose the rings and discs of the subject application. The Office Action has not cited any other prior art as disclosing the rings and discs of the subject application. MPEP § 706.02(j) states “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. ... the prior art reference (or references when combined) must teach or suggest all the claim limitations.” See also MPEP §§ 2142 and 2143. Since the combination of the


Donaldson reference and the tube bundle heat exchanger shown in Figure 1 of the subject application, the rejection of claims 12-16 and 18-20 must be withdrawn.

The Applicants further submit that the Donaldson reference does not provide any teaching, suggestion or incentive to modify the rings and discs of the tube bundle heat exchanger shown in Figure 1 of the subject application to include the "undulating shape" shown in Figure 2 of Donaldson. In the Donaldson device, the baffles 37 extend only part-way across the heat exchanger so that fluid may flow between the open end of the baffle 37 and the heat exchanger shell 17. The "undulating shape" of the open end of the baffle 37 provides clearance between the end of the baffle 37 and the tubes disposed adjacent the end of the baffle 37. In the subject heat exchanger, there are no tubes adjacent to the ring/disc ends since the rings and discs define webs that surround all of the outermost set of the tubes and all of the innermost set of the tubes, respectively. Consequently, there is no need to provide an undulating shape to the ends of the rings and discs to obtain clearance between the ring/disc ends and adjacent tubes.

The various dependent claims add additional features to the independent claims, and are therefore believed to be allowable. Also, the dependent claims are believed patentably distinct on their own merits as being directed to combinations not suggested by the references.

In view of the above-directed amendments and the proceeding remarks, prompt and favorable reconsideration is respectfully requested.

Respectfully submitted,
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APPENDIX A